

Based on the MVC Platform for Innovation Research Colleges

Zhao Heng

ChongQing Industry Polytechnic College, Chongqing City, China 401120
2051667811@qq.com

Abstract

With the rapid development of education in colleges and universities, college students employment situation is increasingly grim, encourage students through independent innovation entrepreneurship to better adapt to the development of the society become inevitable trend. Through the integrated use of Web services architecture, database applications, e-commerce knowledge, put forward a platform for innovation in colleges and universities of the MVC design pattern, by analyzing the feasibility of the system has better.

Keywords: *Innovation platform; MVC; Colleges and universities entrepreneurship*

1. Introduction

With China's higher education system reform, college students' employment is not a fresh topic, and the financial crisis led to the emergence of the economic turmoil makes university students' employment problems once again become a hot issue in society. Said China electronic commerce association leadership, entrepreneurship encourage students through their own efforts to open up the independent self-improvement entrepreneurial new road, and if you want to have more entrepreneurs, have more startups, the key to guarantee to provide effective entrepreneurial environment, especially in colleges and universities to provide platform for electronic commerce, it will provide experimental base for the national college students, develop their practical abilities, the pioneering consciousness and ability, and will provide more excellent students with employment opportunities.

With the development of electronic commerce, with the help of the Internet e-commerce entrepreneurial activity has made an unprecedented development in the whole world, knowledge economy provides people with higher education resource advantages, the popularity of the Internet for college students venture to provide the information advantage, as the elites in the crowd, the contemporary college students should become the life-blood of the entrepreneurial boom a vigorous. At the same time, gradually increase the higher talents in graduation way also gradually starting way to avoid the fierce competition in the job market. At the same time, the historical precipitation down strong redsun atmosphere prompted province college students more choices entrepreneurial path. However, as China's economic development speed, fierce competition demands for entrepreneurs also constantly improve, how to optimize social environment, government policies to encourage, consumer groups to expand, the current situation of the consumption ability enhancement, enhance the ability of graduates to become the most pressing problems. As the cradle of training talents in colleges and universities, to provide a base platform for electronic commerce environment in colleges and universities of the MVC pattern, cultivate the innovative entrepreneurial talents is the need of social development.

No matter from the reform of experimental teaching in university, students' comprehensive practice ability training satisfaction, or business analysis on the present situation of students, the colleges and universities still has a long way to the training objectives and social needs, the universities shoulder the task of training high-level talents,

to the nation under the environment of colleges and universities set up e-commerce platform, let the student knowledge in real "landing", at the same time of exercise training students' practical ability, the practice of the theory of learning environment for the students to provide practical base for cultivating comprehensive talents, to cultivate entrepreneurial talents to provide enough development space and more entrepreneurial added new channels of university students' employment, alleviate employment pressure^[1-4].

At the same time, from the point of our innovative entrepreneurship education practice, for the construction of the electronic commerce platform for innovation in colleges and universities is an important part of the innovative entrepreneurship education in colleges and universities, is an effective carrier for college students' theory to practice to realize,, marketization, socialization of college students after graduation hatch innovation entrepreneurship plays an indispensable role.From the cultivation of college students themselves, to provide practical environment, realize the integration of theory with practice, not only can guide students to fully understand its in the aspects of information demand, competition, risk, and can cultivate their comprehensive practical ability, creative consciousness and creative ability and the ability of autonomous learning, for the long-term development of students to provide a quality.This is the necessary requirement of times and the reality in colleges and universities, is also the need of college students' individual development, but also a direction of the college graduates employment system reform.

2. Related Works

2.1. A Brief Introduction of MVC Design Pattern

With the widely application of the object-oriented technology, the software in the realization of reusable done at the same time also more and more high to its request, for designers, design of reusable object-oriented software is hard, so in terms of considering design, on the design of a certain issue is not any problem is to start from scratch, considering they can on the basis of the original in design, can be called the object-oriented software design experience of design patterns.Specific concept and design mode, from a certain sense, each pattern describes a problem of the cycle, as well as the solution to the problem of the core, in the object-oriented software design, design patterns can be defined as to be used in specific scenarios to solve the problems of the general design for the description of object class and communicate with each other.

Design models as one of the most important in the design of software, it usually has four parts: (1) the schema name, used to describe the patterns of problems, solutions as well as the effect.(2) problem.It shows that the design problem of existence reason and as a result, sometimes can also be described to the specific design problem.(3) solution and effect model.This three parts as a pattern of basic elements, the design patterns in the design of object-oriented system play a unique advantage, can help the designers to quickly complete system design.

Different points of view may be there will be different on the concept of design patterns, and its core sense, it refers to is on the relationship between the certain objects and classes, can be based on that make certain changes to achieve the demand of the system, to solve the problem under certain conditions of universal design.Design patterns are different on the description of the function effect have distinguishing feature each, but all the design pattern is obtained in practice, are used to express the success of the design, the design of the object of this design is not limited to, also has links to the communication between objects, with the purpose of design patterns is to avoid repetition work, improve the reusability of software.

MVC is short for the model-view-controller, the pattern is a lot of interaction and

interface system, based on application of programs used in a large number of user interaction. The model, the three parts of the application of the controller under the trigger events can change the model or view, or can change both at the same time, model of data or property through the change of the controller, all depends on where the view will be automatically updated, also, the controller to change the view at the same time, the view from the potential model to get the data refresh automatically. The MVC design pattern can effectively distinguish the function modules, store and display the data processing complex process, USES the load balanced load on the division of tasks, not only simplify procedures of maintenance, and reduces code duplication. In interactive applications, MVC will be divided into three parts: views, models and controllers^[5-6].

Model: the business logic layer. It is dug from the real world reflect object model, a kind of application logic operations of the data and data encapsulation, and related data processing and calculation, part is the core component of the MVC pattern. To the design of the model, specifically for the state of the business rules, business processes and related processing, and processing of the business process model is accepted view request data, and return the final processing result, relative to other layers, the processing procedures, it is a kind of invisible.

View: the presentation layer. Mainly responsible for according to the state of the model, and the application of the user requirements appear to the user, the related data of the model can be shown, and the model is shown to users in a way that decision, is to implement the interface between the applications and users. In general, multiple views can correspond to a model, and a single view can also be associated with a different model, the change of the model state to inform the view, corresponding to the view of the all and the model state changes can be updated in time, relative to the view, model for reusable code.

Controller: control layer. Used to control the user's input mode and process, realize the interaction between the view and model operation, its main task in charge covers two aspects: (1) to the view of input are explained and map it to model the operation of the executable, and at the same time, which can identify the motion of the user interpretation method calls for the model related demand, to realize the user requests and corresponding model. (2) the model of the relevant change timely notify and reflected in the corresponding view, make its model of the event and logic to perform the corresponding results, using the appropriate view displays to the user.

2.2. The .Net Platform Related Technologies

The .net framework as a new computing platform, simplifies in highly distributed application development in the Internet environment, the local executive and distribution on the Internet, the importance and the application range is more and more widely. The .net framework to achieve the following goals:

1. Provide a consistent object-oriented programming environment, make its object code is in the local store and execution, or in the remote execution or in the local executive and distribution on the Internet, can be executed in its environment.
2. Provide a made the design of its software deployment and versioning conflicts to minimize code execution environment.
3. Provides a secure code execution environment
4. Provides a code execution environment to solve the problem of software related to environmental performance.
5. Provide a developer experience, in response to a greater difference between types of application, to maintain consistent application environment.
6. Provide a according to the industrial standard generating all communications, guarantee based on. NET framework code can be integrated with any other code environment.

Web service is a new kind of distributed component technology, if only in a standard way to publish independent application components to the Web site. Generally issued by the enterprise, to realize the online application service, the service including the needs of interacting with all the details, such as message format, transmission protocol, location and other details.

Its service system structure based on the service provider, service registry, and service requester the interaction between the three roles, using the publish, find, and bind operations applied to complete the corresponding service function. Which release operation is the service provider according to their functional requirements, of interface to the service agent registration and access to the whole process; Search refers to the service requesters through service agency to find the required services; After binding refers to determine the service request, to ensure that the service request to really use the services provided by the process, namely the service requesters to realize the process of its request service. Can be done in the form of interoperable three kinds of operation, Web service system must have a standard technology includes every Web service protocol stack, its service level with integration, the service description, messaging, network transmission four levels, the top three layer corresponding application protocol UDDI, WSDL, SOAP, respectively, at the bottom of network as a transport layer protocol stack, the application protocol contains three, HTTP, FTP, SMTP. HTTP is the most widely used protocol, its each layer corresponding protocol service throughout the whole life cycle of the Web service, the realization of a complete Web service processes are shown in Figure 1 below[7-8]:

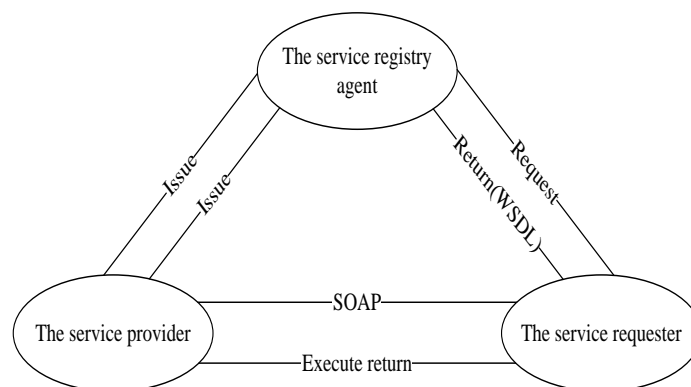


Figure 1. The Flow Chart of Web Services

3. College Platform for E-Commerce System Based On MVC Pattern Analysis

3.1. System Requirements Analysis

College graduates employment situation grim, as their eyes to the college students themselves from the innovation impetus for entrepreneurship. In colleges and universities to establish e-commerce platform for innovation essence is to improve the comprehensive quality and ability of students and the professional application and employment ability, cultivate high-quality comprehensive talents for the society, improve the innovative entrepreneurial success, help entrepreneurs innovation and innovation to achieve innovation and entrepreneurship, in improving innovation ability of college students themselves at the same time, improve the social employment problem. Therefore, since the platform design must fully consider the college's own characteristics, namely to meet the needs of the work of university teachers and students to learn, and to cultivate and enhance the consciousness of the students' innovative entrepreneurial, promote innovation entrepreneurship environment. In this platform, mainly including the campus

entrepreneurial practice and campus entrepreneurial simulation system of two modules, mainly improve students independent venture level, business comprehensive application level, the third party e-commerce platform and integrated application of information technology application level level four level application ability, to cultivate entrepreneurial talents, encourage students to carry out business activities, business to promote employment as the main target, make it a practice of comprehensive service platform.

At the same time, students can also have a certain ability and level of team, direct access to the entity shop, self-employed, independent business decision-making and market analysis, to win the best benefit. Students' entrepreneurship is not only a change of role, more in need of various aspects of knowledge accumulation, good tolerance and risk awareness. E-commerce business platform mainly to train students' pioneering consciousness, entrepreneurship and entrepreneurial spirit for the purpose, to provide practical environment for entrepreneurship education in colleges and universities, college students' diathesis, make the student fully practice verification, knowledge is a good way of choosing a career, to broaden the employment channels, alleviate the employment pressure of college students, cultivate the innovative entrepreneurial talents for the society has great significance.

3.2. The Analysis of System Architecture

According to the specific region environment characteristics of colleges and universities and the needs of students to study for this platform for e-commerce system in colleges and universities of architecture, the platform including the campus business simulation and practical system of two big functions. In order to make the system has good scalability and maintainability, the system architecture based on MVC design pattern, make the business logic of the system and data processing. The relationship between the system each function and the relationship between the user and function, system function and the link between the user and function, the platform for e-commerce system in colleges and universities, to participate in the object mainly is divided into general users and administrators, and the general users mainly including tourists, business entities, entrepreneurial simulated users and users of online learning, its main work at the front desk system, main background to the system administrator user management, and related to data input, update, mainly system background, including the order of the query, processing, product classification and management, and other related work.

3.3. The System Function Analysis

As the platform for electronic commerce is specially designed for colleges and universities based on the environment of the platform, it depends on the network of colleges and universities as the inherent network hardware, computer professional teachers and students with advanced technology and manpower support team and service special group college students, so in some ways, this system is the main participants in the students, they can not only as a business user's identity, and some students bear administrator user identity, second is teachers' users.

The platform covers the service of colleges and universities, business internship shops, shops, online learning, evaluating the five function modules, its core function module is internship analog shops module and start-up of actual combat, in its environment, students from practice, simulation exercise in shop in a simulated workout, and professional knowledge of real use. In entrepreneurial shops, from the roles of students to self-employment career change of role, in its platform, the students self-employment, realize from simulation to practice ascension, in alleviating employment pressure and at the same time, and make students' comprehensive quality to get a bigger development. The specific function modules as follows:

College service: not only provide learning communication platform for teachers and students, release the latest dynamic, and can help the school work-study solution.

Simulation shops: student login through the electronic commerce business platform, can undertake projects and the role of choice, to be free entrepreneurial teams after the success of the team, to write a business plan, review by the teachers, to rejoin after, to handle the industrial and commercial tax registration, enterprise simulation operation, to create enterprise project operation management, decision analysis, *etc.*Based on realistic simulation of real working environment, help students to master in real business situations that may be met during the process of entrepreneurship, and analyzes the problems and operation results and evaluation, which is more realistic for entrepreneurial experience and a more profound understanding, help students to improve their awareness, with entrepreneurial skills, enhance the ability of choosing a job.

Entrepreneurship shop: students by simulating the store management simulation, can be introduced into entrepreneurship store page, on the basis of the self-employed, in this platform, students can post their products and related information, in the channel of replenish onr's stock, the students could use the supermarkets and work-study center, complete product trading for quick and convenient.

Venture evaluation: mainly contains two parts, one is a teacher according to the business and trade situation of student entrepreneurship shop give evaluation, simulation of business simulation shop business strategy.The second is to provide the related evaluation question, students to answer his questions according to the application of the test or fill in the related information, include problem choice, the choice of images, is, vocabulary understanding and reasoning ability, *etc.*Let college students to entrepreneurship in before starting a business is a psychological understanding, enhance their awareness of and at the same time, select the relevant for them provide targeted help start-ups^[9-12].

3.4. The Main Business Process Analysis

Through the electronic commerce business platform and complete the from simulations to the real business is a complex technical process, but it is a complex process try to be transparent to users, with strong development and flexibility, so that the students in the process of the system of each can carry out their professional knowledge, at the same time, and give full play to the initiative and creativity.The main business process is shown in Figure 2:

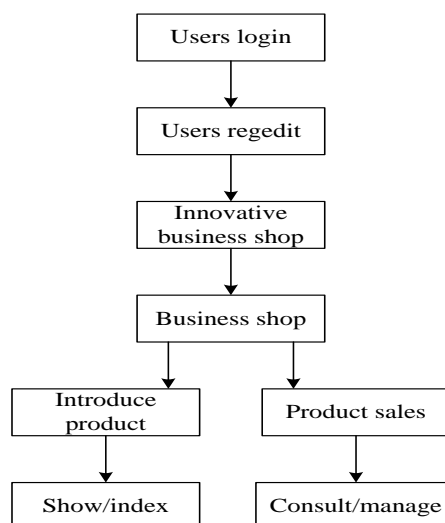


Figure 2. The Main Business Process

4. Based on the MVC Platform for Electronic Commerce Research Colleges and Universities

In order to improve the security of the system and user operability, system based on MVC design pattern, the view through. Aspx file to show the user the data;Page controller by.net aspx page background code file. The cs, front controller is mainly used to respond to user access, and according to the Web. Config file configuration for demand response and action execution logic decision.In which the User can complete the User Info component class inspection, audit and other related operations;AccessBase component class complete data access, update, and other related basic database operations, component class respectively used to implement the system, the operation of actual combat management, simulation of related functions, such as open a shop, product releases, and other functions.

4.1. Database Design and Implementation

Database design includes two parts: part of the database logic design, content contains the level corresponding to the concept model, the concept of the system to deal with the global database logic structure, also included for user-level model;The other part is the physical design of database, which is on the premise of logic structure have been confirmed design database storage structure.At the same time, the database design is the application of computer software and hardware technology, management technology and application domain knowledge system engineering technology, its implementation has to be according to certain rules, methods and the necessary steps, it is not by personal experience or skills can achieve and complete.Generally speaking, we put the design step of database in four steps: requirement analysis, concept design, logic design and physical design.The specific processes are shown in Figure 3 below:

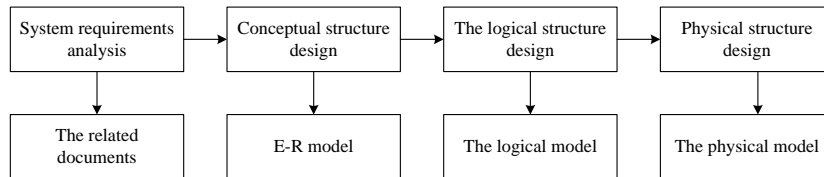


Figure 3. The Flow Of Database Design

College platform for electronic commerce using SQL Server relational database, consider reality system is made up of entity and contact.We put all the data are organized into table, the table is made up of rows and columns, rows represent data records, columns represent records of the domain, entity and values in the table to reflect the real system.

4.2. Based on the MVC Design in each Layer

B/S mode with ASP.net technology combined with the framework of MVC design pattern, implements the business logic, control logic and the classification of the front-end data display logic, so that the system has good scalability and maintainability.

Based on ASP.net framework, the implementation of the view is simpler, the system of every page in the form of composite view, implement a page containing multiple child views.So-called child view it but simple Html controls, but also the server or multiple nested control Web custom control. The layout of the page and user number of labels and parts, are template to define, information platform, according to the template definition to create a page, according to different conditions of template content, use a different template content configuration, as some of the dynamic template content, according to the

different requests of users, the user unit choose to filter the display of the content, the page a user part according to the relevant configuration of modules, at the same time of enhancing display code reusability, and promoted site layout prototype^[13-15].

The view part of the process is roughly as follows: first of all, the page template to define the layout of the page;Page configuration file to define the user's part;Second, page strategy class to initialize and load the page;Initialized user parts according to its relevant configuration, load the validator and commissioned for event, and finally, submit through check, to business entities in the model.From the point of view of dealing with the implementation process, to achieve the flexibility of the Web application, also use the template configuration, configuration page, and verify the configuration of many configuration files.The process shown in the Figure 4 below:

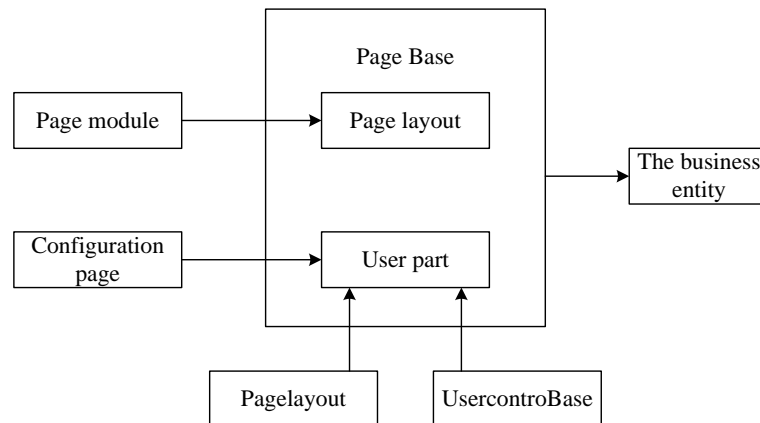


Figure 4. View Processing Flow Chart

VC design pattern in the system model, it does not contain any code associated with the view, is only related to the database.It system from the concept of internal state and change the state of the system action of these two classes.In this paper, according to the demand of the system, provides the model entities and business processing two classes of objects, its specific functional description is as follows:

1. The business entity object

Mainly responsible for handling of specific logic and related calls business logic model of encapsulation, and submit the related with the corresponding view component to generate the corresponding requests;It from belong to ProcessBase class derived subclass, it can also be by defining attributes to describe the client's data and information about the form.

2. Business processing object

Business processing objects to encapsulate each concept in the system requirements, object need all the information, including relevant itself at the same time displaying information, data, information, and a series of related data.It can be related directly to the business entities to read and write operation, the implementation of the support of the interaction between view and model, to separate the business process and business entities, so that we can achieve the reuse of business logic.

Platform for e-commerce system in colleges and universities, the definition of the DataBase as a basic class public DataBase operations, be responsible for the implementation and the DataBase connection and interaction of some common operations, define UserLogin, DBUser these two classes to complete the related business logic of specific operations, including UserLogin is mainly used to complete the record of logging operation, finishing login successful user name and password record to the specified log file.

4.3. The Controller Design

Centralized manner application management, make its can control and coordinate the processing of each user can be multiple requests, this business platform system, the front controller is used to implement to the operation of the main interface, page end controller to realize the system related user request page. In general, the client requests received by the application controller to focus, according to the request has decided to adopt the execution logic function, the next task to meet the requirements of the user interface view components. In this part defines the distributor, request capturer, a controller class related categories of control, they work together to complete the function of the controller. Which capturer class to capture the HTTP request and sent to the controller class, the controller class as the initial entry point of processing all requests in the system, after some necessary processing delegates the request to the distributor classes; The distributor class

The distributor is responsible for the view of management and navigation, its management will be presented to the user to choose which view, resources and provide distribution control.

5. Conclusion

Platform for electronic commerce in university, as the business environment of cultivating college students' practice ability, is the social needs and the needs of fostering talents in universities and colleges. According to the actual situation of colleges and universities were investigated, understand the students' interest in e-commerce business platform and requirements, combining the theory of adaptive structure, explore new entrepreneurial platform service mode, the integrated use of electronic commerce, database applications, Web services architecture and MVC design pattern and other knowledge, construct a platform for electronic commerce system model, and on this basis to build a suitable for the characteristics of e-commerce business platform.

References

- [1] L. Hao, "Application of MVC Platform in Bank E-CRM", *International Journal of U- & E-Service, Science & Technology*, (2013), pp. 6.
- [2] Y. Chen, P. Chen and M. Karczewicz, "Signaling characteristics of an MVC operation point: US", US8948241 [P]. (2015).
- [3] Y.T. Liu, "Design and implementation of the on-line bank system based on the Spring MVC model", *Electronic Design Engineering*, (2013).
- [4] Y.F. Li and Z.G. Chen, "Design and Implement of News Publishing System Based on MVC Design Pattern[M]//", *Proceedings of the 2012 International Conference on Communication, Electronics and Automation Engineering*. Springer Berlin Heidelberg, (2013), pp. 755-760.
- [5] J. Fujima, "Building a Meme Media Platform with a JavaScript MVC Framework and HTML5 [M]// *Webble Technology*", Springer Berlin Heidelberg, (2013), pp. 79-89.
- [6] P. Seeling and M. Reisslein, "Video traffic characteristics of modern encoding standards: H.264/AVC with SVC and MVC extensions and H.265/HEVC", *Scientific World Journal*, vol. 2014, no.1, (2014), pp. 29-29.
- [7] A. De Abreu, "Frossard P, Pereira F. Fast MVC Prediction Structure Selection for Interactive Multiview Video Streaming", *Proceedings of Pcs*, (2013), pp. 169 - 172.
- [8] D.P. Pop and A. Altar, "Designing an MVC Model for Rapid Web Application Development", *Procedia Engineering*, vol. 69, no.1, (2014), pp. 1172-1179.
- [9] W.U. Xu, X.U. Jin and X.Q. Xie, "Construction and implementation of 'classic reading' innovation platform", *Journal of China Universities of Posts & Telecommunications*, vol. 20, (2013), pp. 128-135.
- [10] F.U. Jianqiu, L.I. Yimin and Z. Fang, "Construction of Innovation Platform for CEEUSRO", *Management Science & Engineering*, vol. 7, no.3, (2013).
- [11] M. Hossain and K.M.Z. Islam, "Ideation through Online Open Innovation Platform: Dell IdeaStorm", *Journal of the Knowledge Economy*, vol. 6, no.3, (2015), pp.1-14.
- [12] L. Huang and M. Huang, "Cluster Innovation Platform and Cluster & Knowledge Liquidity Risk Control", *Science & Management*, (2015).
- [13] Q.N. Zhang and D. College, "A Study of Innovation Platform Construction Based on Knowledge Reuse", *Technology & Innovation Management*, (2015).

- [14] X.B. Zheng, “Research on Supply and Pricing Mechanism of Regional Innovation Platform”, R & D Management, (2015).
- [15] F.U. Guo-Liang, H.P. Zhi and N.Y. Zhang, “Practice and Exploration of Collaborative Innovation Platform Construction for Higher Vocational Colleges——Take Hebei Institute of Mechanical and Electronic Technology for Example”, Vocational & Technical Education, (2014).

Author



Zhao Heng received the Bachelor 's degree in English Teaching from Chongqing Normal University's Institute of Foreign Language,CHINA in 2004.He is currently working toward the Master's degree in Ethics from Southwest University's Institute of Political Science and Public Administration.He will receive the Master's degree in 2016. He is currently researching on Research,Entrepreneurial Information Service,Employmentand Career Guidance.